

VACUUM PACKAGING FOODS AT HOME

Factsheet | HGIC 3865 | Revised: Jun 19, 2007

Vacuum-packaging machines or vacuum sealers are available to vacuum package foods at home. This process may extend the storage time of refrigerated foods, dried foods and frozen foods, but it may increase the danger of growing disease-causing bacteria as well. Vacuum packaging is not a substitute for safely processing perishable foods to be stored at room temperature. Perishable foods that are vacuum packaged must still be kept refrigerated or frozen at proper temperatures.

Advantages of Vacuum-Packaged Foods

Vacuum packaging involves removing air from the food package. Oxygen in the air promotes certain reactions in foods that can cause the foods to deteriorate. Therefore, the removal of oxygen from the food package does extend the storage quality of preserved foods. For example, the presence of oxygen can cause fats to become rancid or foods to change colors. (For this reason, materials such as plastic wrap or freezer paper that block out oxygen as well as moisture are recommended for wrapping foods for storage.)

Disadvantages of Vacuum-Packaged Foods

The removal of oxygen from a food package does not eliminate the possibility for all bacterial growth. Although it is likely to eliminate spoilage bacteria that cause deterioration in the quality of food in ways that would let you know the food was going bad (odor, color, sliminess, etc.), some pathogenic (disease-causing) bacteria prefer low-oxygen environments and reproduce well in vacuum-packaged foods.

For example, *C. botulinum* bacteria that cause the deadly botulism poisoning grow at room temperature in low-acid, moist foods in a low-oxygen environment. If spoilage bacteria are not present, *C. botulinum* bacteria can reproduce even easier, making the food unsafe without obvious symptoms of the food being spoiled to warn the consumer. Oxygen in the environment offers some protection against *C. botulinum* growth in foods that are not vacuum packaged.

Vacuum packaging of dry, non-perishable foods such as nuts and crackers does extend their storage quality and these products are low enough in moisture that bacterial growth is prevented. However, these foods also store well in airtight containers without the expense of a vacuum-packaging machine.

Storage of Vacuum-Packaged Foods

It is important to remember that perishable foods that are vacuum-packaged must still be stored in the refrigerator or freezer. Although the quality of the food may be extended, it is still possible that disease-producing bacteria may be present.

Perishable foods must be kept either in the refrigerator between 34 and 40 °F, or for longer storage, in the freezer at 0 °F or below.

Vacuum-packaged foods that are stored frozen will be safe, but precautions must be taken when these foods are thawed. If the package stays closed during thawing, you still have a vacuum environment where pathogenic bacteria can be active if the temperature is warm enough. That is why it is important that these

foods be thawed at proper refrigerator temperatures and not on the kitchen counter at room temperatures. Never leave thawed, vacuum-packaged foods at room temperature.

Safe Food Handling

Whether storing foods that have been vacuum-packaged in the home, or those packaged with conventional materials, it is important to follow basic safe food handling practices. Remember, removing oxygen from a food's environment does not just solve some food storage problems; it could cause others. It is important that safe handling practices be followed at all times since vacuum packaging creates very good conditions for some pathogens to be a problem if any mistakes are made.

- Keep perishable foods at 40 °F or below. Vacuum packaging does not allow you to store foods at room temperatures.
- Discard foods that have been held at temperatures over 40 °F for more than two hours.
- Keep hands, utensils and counters clean.
- Thaw foods in the refrigerator, never at room temperature. To thaw more quickly, immerse the sealed package in cold water, changing the water frequently. Foods may also be defrosted in the microwave if they will be cooked immediately.
- Cook raw meats, poultry and seafood thoroughly to recommended temperatures and use a food thermometer to check.
- Date foods before storing and use within recommended times.

For more information on the proper handling of foods, request **HGIC 3500, *Basics of Safe Food Handling***.

Originally published 11/01

If this document didn't answer your questions, please contact HGIC at hgic@clemson.edu or 1-888-656-9988.

Author(s)

Pamela Schmutz, Retired HGIC Food Safety Specialist, Clemson University

Dr. W. Scott Whiteside, PhD, Professor; Clemson University Department of Food, Nutrition and Packaging Sciences, Clemson University

E.H. Hoyle, PhD, Emeritus Faculty, Food Safety Specialist, Clemson University

This information is supplied with the understanding that no discrimination is intended and no endorsement of brand names or registered trademarks by the Clemson University Cooperative Extension Service is implied, nor is any discrimination intended by the exclusion of products or manufacturers not named. All recommendations are for South Carolina conditions and may not apply to other areas. Use pesticides only according to the directions on the label. All recommendations for pesticide use are for South Carolina only and were legal at the time of publication, but the status of registration and use patterns are subject to change by action of state and federal regulatory agencies. Follow all directions, precautions and restrictions that are listed.

Clemson University Cooperative Extension Service offers its programs to people of all ages, regardless of race, color, gender, religion, national origin, disability, political beliefs, sexual orientation, gender identity, marital or family status and is an equal opportunity employer.

